Brunswick coast (Lat. 45° 3′ N., Long. 66° 28′ W.) and was found on August 8, 1920, on the shore at "Ponta Delgada, Flores, Azores" (apparently Delgada Point of the Hydrographic chart, Lat. 39° 31′ N. Long., 31° 13′ W., and not Ponta Delgada, San Miguel). Flores is one of the northwestern islands of the Azores and Delgada Pt. is its northmost point. It would therefore seem from the position in which the bottle was found that it had approached the Azores from the north or northwest. The bottle was of heavy glass and closed with a paraffined cork. It contained a Canadian postcard, offering a reward to the finder who wrote on it the time and place of finding. Set out at the same time were 99 other similar bottles and they were set out in a line from Point Lepreaux to Gulliver Hole, on the Nova Scotia Coast. A bottle set out about a mile away from the one found in the Azores was picked up on Cape Cod.

From the known drift of other bottles in the Gulf of Maine it seems probable that the bottle which was returned from the Azores passed southwestward in the Gulf of Maine and passed Cape Cod into the Atlantic and further that the bottle took about two and one half months to reach the water near Cape Cod. Without doubt the bottle encountered the "Gulf Stream" and was carried across it to its eastern and southern side as the "Gulf Stream" swings round the North Atlantic. The time taken by the bottle to go from the American coast to the Azores was probably not more than nine and one half months.

It is interesting to compare the drift of this bottle with that of one recorded in the *Toronto Daily Star*, November 1, 1920.[2]

A bottle cast into the Atlantic Ocean near Newfoundland by Sergeant D. McInnes, of Edmonton, when returning to Halifax, September, 1919, after shooting at Bisley, reached Nieuport, Belgium, last August.

This bottle undoubtedly traveled in the western and northern edge of the "Gulf Stream" and took about the same time to cross as the other bottle.

The drift of these bottles may be further compared with the drift of derelicts[3] in the North Atlantic and especially with the well-known drift of the schooner *Fannie E. Wolston* which was adrift for at least two and a half years and was observed over thirty times. She was observed at sea in Lat. 36° N., Long. 74° W. (northeast of Cape Hatteras) on December 15, 1891, and four times afterwards on her way across the Atlantic in an easterly direction until she reached Lat. 35° N. and Long. 39° W. on June 13, 1892, having drifted in the six months about four fifths of the way from the American coast to the Azores. After reaching this point she circled in the Saragasso Sea and returned by a southern route to the American coast.

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[2] For this citation the writer is indebted to Miss Rigby of the staff of the Atlantic Biological Station.

[3] "Wrecks and Derelicts in the North Atlantic Ocean," 1894, U. S. Hydrographic Office.

AN ADJUSTABLE EMBOUCHURE

To the Editor of Science: I am much interested in Professor Barus's article on "An Adjustable Embouchure" (which the types have made "embouchuer") appearing in Science for January 14, which has just come to hand. I think he did not see my instrument, exhibited at the meeting of the National Academy of Sciences and at the meeting of the American Physical Society in 1919, which I less modestly called "an artificially played brass instrument," and which I claimed worked exactly upon the principle of the human lips. except that it lacked their softness. In it a light piston, like a safety valve, with mass like the lips, was lifted from its seat by the air pressure, letting a puff of air into the wind instrument, while the potential energy (elasticity of the lips) was furnished by a wire under adjustable tension. The pulse being reflected at the mouth of the horn (see my paper in *Proc. Nat. Acad. Sci.*, July, 1919) comes back, and if it arrives in the right place,

the vibration is maintained. It also plays under water!

I have written out the theory, which under a certain assumption, shows that the sound can not be simple harmonic, though periodic. Pursuing the subject farther, I find that the problem leads to an integro-differential equation of a new type, and non-linear. Being in Paris in the summer of 1919 I wrote it out in French, hoping to present it to the Académie des Sciences, but took the précaution to show it to M. Hadamard. When he saw it he threw up his hands and exclaimed, "Vous avez résolu cela?" I replied, "Non, mais je l'ai posé," bearing in mind one of his papers where he had said that a problem was half solved when it was "bien posé." I thought I deserved some credit for that. So there it rests, half (or less) solved. If any of your readers think they can solve it, I am willing to divide the profits, or κῦδος, with them.

I am also indebted to Professor Barus for the word "siffling," which I had thought a Gallicism, but find that it is used by Chaucer.

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VARIATION IN TARAXACUM

TO THE EDITOR OF SCIENCE: Since several species of *Taraxacum* are parthenogenetic and at the same time highly variable they have looked like tempting material for the study of certain phases of genetics. Moreover their "polymorphy," as well as that of other parthenogenetic plants, has served as a partial basis for well-known attempts to explain parthenogenesis as due to hybridization.

As a matter of fact the degree of leaf dissection is correlated with the age of a given rosette. The typical seedling leaf in both of our common species (*T. vulgare,* gray-fruited, and *T. lævigatum,* red-fruited) tends to be entire and smooth, with the plant producing more dissected, and often more hairy, leaves as it grows older. This would have been obvious to students of the genus but for the confusing fact that smooth, entire leaves are often found on very old roots. If such cases are examined, however, it will be found that the apparently juvenile leaves are borne on multicipital branches of tender age.

It is of course well known that the vigorous production of blossoms after the second year causes a radial splitting of the root crown in seedling plants and the production of several daughter rosettes upon the parent root. This cleavage may extend through the length of the root and produce a number of distinct individuals, but in any case the daughter rosettes repeat the history of the parent seedling rosette, so far as leaf characteristics and blooming habits are concerned. If the newly split crown has been buried, the daughter rosettes will be produced at the end of typical rhizomes, often as much as six inches in length. Subsequent pressure renders these rhizomes quite root-like.

The above considerations clarify the interesting results of a culture experiment reported by Stork[1] It is, moreover, not unprofitable from the standpoint of taxonomy to inspect the average herbarium collection of *Taraxaca* while bearing in mind the correlations just pointed out.

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SCIENTIFIC BOOKS

Pharmaceutical Botany, A Text-book for Students of Pharmacy and Science. Third Edition. By HEBER W. YOUNGKEN, A.M, M.S., Ph.M., Ph.D., Professor of Botany and Pharmacognosy, Philadelphia College of Pharmacy. P. Blakiston's Son & Co., Philadelphia. 1921. Pp. xix + 479. 238 illustrations and glossary.

This third edition of Dr. Youngken's excellent text-book has all the satisfactory points of the two preceding editions together with an enhanced value to teachers of the subject on account of the extensive improvements made in it. By reason of its adoption as a text in many academic institutions in addition to its very general use in the pharmacy schools, the author has followed the tendency already expressed in the second edition of making it more suitable for general botanical

[1] *Bull. Torr. Bot. Club,* 47: 199–210, 1920.